1.

Data is retrieved from SQL server by the following commands:

Graphical user interface, text, application

Description automatically generated

(a)

Chart, line chart

Description automatically generated Chart, line chart

Description automatically generated

(b) Strategy: mean 2.01%, std 0.25%, SR 8.18; market: mean 17.41%, std 12.41%, SR 1.40

(c) From autocorrelation and partial autocorrelation plot, they are quite stable and stationary

Graphical user interface, application, Word

Description automatically generated

(d) There is a lot of extreme events by box plot below. If we trim the portfolio to be limited to 3 std away from mean, the “normal” performance would be: mean 1.76%, std 0.16%, SR 11.14. So we would say the extreme events do not have a significant effect on overall performance.

Chart, box and whisker chart

Description automatically generated

(e) The correlation is less than 9%, which I think is a good sign of market neutral

(f) The correlation between long and short sub-portfolios is -0.35

(g) It is nearly impossible to trade at closing price; also, our sample of 690 companies maintained their business and maintained to be listed, which is suspicious that they are randomly selected. There could be selection/survival bias involved.

Q2

(a) Generally speaking, with longer lag, the performane is worse. k = 1 is optimal among the all.

Text

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